REMARKS/DISCUSSION OF ISSUES

Claims 17-32 are pending in the present application. Claims 17, 21 and 25 are the independent claims.

Rejections Under 35 USC § 102(b)

The Office rejects claims 17-32 under 35 USC § 102(b) as being anticipated by the *Calligaro, et al.* (U.S. Patent No. 5,102,822).

To properly establish a *prima facie* case of anticipation, *all* of the claimed elements must be found in the prior art. It follows, therefore, that if a *single* claimed element is not found in the prior art, a *prima facie* case of anticipation cannot properly be established.

Claims 17 and 21 are drawn to a microwave/millimeter-wave monolithic integrated circuit device, and includes in combination "... *a silicon substrate*...".

Claim 25 is drawn to a method of fabricating a microwave/millimeter-wave monolithic integrated circuit device, and includes in combination "...*providing a silicon substrate*..."

The present Office Action maintains the rejection under 35 USC § 102(b) set forth in the Office Action of April 1, 2003 with regard to claims 1-4, 8-10 and 14. The Office Action of April 2003 asserts that *Calligaro, et al.* discloses a microwave integrated circuit device which "...includes a semiconductor substrate 3 such as silicon and GaAs (Col. 1, lines 18-23, Col. 2, lines 40-42 and Fig.1)..." (Kindly refer to page 4 of the Office Action.)

Notably, the reference discloses a substrate 2 that is semi-insulating (SI) GaAs and does not disclose a silicon substrate 2 as the (4/2003) Office Action asserts. (Kindly refer to Col. 2, lines 36-66 for support for the above assertion.)

The reference to *Calligaro, et al.* discloses that the materials upon which

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the invention may be applied are Group III-V materials, although it is not restricted to these materials. In a rather cursory manner, *Calligaro, et al.* notes that the invention can also be applied to silicon for use with silicon diodes. However, the reference does not disclose that the **substrate is other than semi-insulating GaAs**. In particular, the substrate 2 of *Calligaro, et al.* is not disclosed as being silicon. Moreover, while the reference indicates that the invention can be applied to form high-frequency silicon diodes, the reference does not disclose how this would be effected and certainly does not disclose the use of a silicon substrate as is specifically recited in the independent claims noted above. (Please refer to column 1, lines 17-50; column 3, lines 31-32; and Fig. 2 for support for these assertions.)

Accordingly, the reference to *Calligaro, et al.* lacks the teaching of a **silicon substrate**, as is claimed, and as the Office Action asserts. Therefore, because the reference to *Calligaro, et al.* specifically lacks at least one of the limitations of independent claims 17, 21 and 25, these claims and the claims that depend directly or indirectly therefrom are allowable over the applied art. Allowance is earnestly solicited.

Rejections Under 35 U.S.C. § 103(a)

The Office rejects claims 19, 20, 23 and 24 under 35 U.S.C. § 103(a) as being unpatentable over *Calligaro, et al.* in view of applied secondary and tertiary references. The Office Action maintains the rejection of the April 2003 Office Action as applied to claims 5 and 6.

The establishment of a *prima facie* case of obviousness under 35 USC § 103(a) requires that *all* of the elements be found in the prior art. It follows that if a *single* claimed element is not found in the prior art, a *prima facie* case of obviousness cannot be established. Moreover, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is a teaching, suggestion or motivation to do

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so. The reason, suggestion or motivation may come from references themselves or from the knowledge generally available to one of ordinary skill in the art. However, relying upon hindsight knowledge of applicants' disclosure when the prior art does not teach nor suggest such knowledge results in the use of the invention as a template for its own reconstruction. This is wholly improper in the determination of patentability.

For the reasons set forth above, and while in no way conceding as to the propriety of the combinations of references, or that the features of the pending claims are within the teachings of the applied art, applicants assert that because independent claims 17 and 21 are allowable over the applied art, the claim that depend directly or indirectly therefrom are also allowable. Allowance is earnestly solicited.

Conclusion

In view of the foregoing, Applicant respectfully requests withdrawal of the above noted rejection of record, the allowance of all pending claims, and the holding of this application in condition for allowance.

If any points remain of issue that may best be resolved through a personal or telephonic interview, the Office is respectfully requested to contact the undersigned at the telephone number listed below.

In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact William S. Francos, Esq. (Reg. No. 38,456) at (610) 375-3513 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies to charge payment or credit any overpayment to Deposit Account Number 50-0238 for any additional fees under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

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10/005,513
Reply to Office Action
Dated March 29, 2005

Respectfully submitted on behalf of:
Tyco Electronics Corporation

by: William S. Francos (Reg. No. 38,456)

May 31, 2005
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